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ABSTRACT

In six parts, this paper highlights the significance of environmental education (EE) and its contributions to national development in developing countries and in Kenya in particular. Sections 1 and 2 provide an overview of environmental problems and the history of worldwide environmental education, respectively. Sections 3 and 4 review the basic concepts and principles of EE and the role EE plays in national development in developing countries. Section 5 discusses EE and development in Kenya. Section 6 summarizes the paper, indicating that environmental education has been incorporated into Kenyan primary school, secondary school, and university curriculums. As a result, reforestation and soil conservation policies and procedures have been widely implemented in Kenya by better environmentally educated citizens. A bibliography is provided. (JAM)

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DEVELOPMENT AND INTERNATIONAL ENVIRONMENTAL EDUCATION

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Introduction

In the past many people thought that urbanization and industrialization were the necessary indictors for a developing country, and even as recent as 1970, many people believe that economic growth, industrial, and technological development will improve the quality of life by producing more marketable goods and increasing the excavation activities for mineral and energy sources. But, it is now evident that these notions are not completely true due to rapid, and more often unplanned developments that have created many environmental problems (deforestation, pollution).

The purpose of this paper is to highlight the significance of Environmental Education (EE) and its contributions to national development. Sections one and two will provide an overview of environmental problems, and the evolutions of EE respectively. Sections three and four will discuss the basic concepts and principles of EE, and the role of the EE in national development and sections five will discuss EE and development in Kenya; and last, but not least, section six, will present a summary and some accomplishments.

SECTION ONE

An Overview of Environmental Problems

The pressures on the environment are many, and come from many diverse sources such as poverty, low levels of technology, mismanagement of resources, lack of adequate education and trained personnel, underdevelopment, pollution and many more. Perhaps, poverty is one of the worst type of 'pollution' and with the intensification of development and technology in the developing countries to attain higher levels of standards of living. More often this process involves the alterations of natural environments, and in many instances these modifications affect the environment negatively. For example, the construction

of the Aswan Dam in Egypt and other similar dams that have spread the schistosomiasis/bilharzia to the human populations. Schitosomiasis infect an estimated 250 million people in the countries of Africa, Asia, and South America. It is now considered that, "After malaria, schistosomiasis is ... the world's most widespread, serious infectious disease ".[1] The construction of dams for agricultural and electricity purposes also displace large numbers of people. The Akosombo Dam in Ghana moved 1% of its national population in the mid 1960s (78,000 people) to provide room for the dam. The dam covers an area of 8,482 square kilometres.[2] This type of development, illustrates just one way in which human beings tamper with the environment for the sake of "development".

There are many types of environmental problems. These problems can be grouped into three broad areas: global, regional, and local. The global are international environmental problems in nature, and they are perhaps the most dangerous because in this category insecticide/pesticide residues have tendencies of persisting in the environment for long periods of time, and through agents like wind, water and living things, chemicals in the environments frequently travel beyond their orginal sites of applicaiton; the pollution of the oceans and rivers because of the soil erosions and chemicals from the land based man's activities and dumping activities in the world oceans; and pollution of the atmosphere through the operations of industries in the burning of fossil fuels which have resulted into the negative effects of the "acid rain" and the like.

The second category involves regional problems such as the spreading of 'desertification', and river development up to or downstream across national boundaries, and air pollution between neighbouring countries. The third type include local problems which are often confined within national boundaries. For example, the eutrophication of lakes from fertilizer runoff, insufficient provision of clean water and unsafe disposal of waste materials. These problems can be viewed from two perspectives: those that evolve as a result of abject poverty and these are manifested through many years of mismanagement of the environments. This mismanagement has become very apparent in overgrazing, soil erosion, industrial and air pollution, deforestation, surface water pollution, desertification, and drought. Examined from the other perspective, there are those problems that surface in the name of "development" process.

Many African nations feel the pressure to provide adequate food for its people and this means intensifying

agricultural activities through reclaiming arable land through cutting down forests, constructing irrigation, excessive use of pesticides and chemical fertilizers on the environment. This requirement puts heavy demand on soils and without proper management soil erosion increases. One report indicated that,

> The global area destroyed/degraded soils-once biologically productive-totalled 20 million square kilometers. This was described as more than the entire worldwide arable area used for contemporary food production... the continuing annual loss to agriculture was about 60,000 square kilometres, via processes of erosion/ destruction mainly caused by human activities and malpractices.[3]

The effects of this mismanagement and abuse may be irreversible, and precautionary measures must be implemented by every nation concerned with the environment. Preventive measures are less costly than curative actions. With this brief overview of environmental problems, it is necessary to provide a short historical development of Environmental Education (EE) globally.

SECTION TWO

Evolution of Environmental Education

In recent years, nations all over the world have become conscious about man's relationship with an impact on the environment. This awareness began developing in the industrialized nations. These environmental concerns began to grow stronger in the 1950's as a result of human activities such as the air pollution in London and New York and the decrease of aquatic life in the North American Great Lakes. Many birds died as a result of unexpected side effects of the use of dichloro-diphenyl-trichloro-ethane (DDT) and other organo-chlorine pesticides. The extensive oil spill pollution from the wreck of Torrey Canyon (super tanker) in 1966 created extensive damage to natural resources. Because of the highly publized issues, fears developed that human lives could be negatively affected by pollution and the human tempering with the environments.

As early as 1960, National Rural Studies Association (NRSA) developed in Britain began addressing environmental issues, commencing with school teachers who were interested in natural history and rural education. More than a decade later NRSA changed its name to the National Association

for Environmental Education in the early 1970's. As the environmental concerns continued to develop, other groups in Britain, such as lecturers of universities and colleges formed their own organization, Society for Environmental Education (SEE) in 1970 to deal with similar environmental issues as the NRSA, but in 1976 the two societies united to form one organization with the aim to educate people about environmental matters.

While environmental conciousness was growing in Britain, other similar developments were being initiated in the United States of America to tackle similar environmental problems (population growth and density, industrial pollution). In 1962 Rachel Carson's book The Silent Spring delineated many environmental problems. Following this publication, in 1970 major international bodies such as the International Union for the Conservation of Nature and Natural Resources (IUCN) convened a conference on environmental concerns and the role of education within this context. The conference was held in Nevada, U.S.A., to deliberate on environmental problems and how to educate the public. After this meeting, several major international conferences followed, including the Stockholm conferences in 1972, Unesco-Unep-IEEP in Belgrade in 1975, and the Tblisi Conference in Russia in 1977.

a) The Stockholm Conference - Sweden 1972

The year 1972, is the year during which the United Nations Conference in "Human Environment" was convened in Stockholm. Environmental pollution was one of the key items in this conference. The representatives of the industrialized countries in this meeting approached the conference with environmental pollution problems as one of their priorities. As these industrialized nations emphasized these issues (pollution, protection of the global resources), the developing countries presented slightly different agenda at the Stockholm Conference.

The developing countries approached the Stockholm Conference with different problems of their own. These problems included: inadequacy of human settlements, insufficient provision of clean water, unsafe disposal of human body wastes, the continued infectious diseases and rampant poverty. Along with tackling these problems, the developing nations stressed that they are in a period of rapid change of development with meagre financial resources and acute shortages of skilled personnel. While issues like pollution were not high on their agenda these countries nevertheless, agreed in principle, that inexpensive routes to

industrialization should be sought while being very careful about minimizing negative effects of industrial pollution. The Stockholm Conference generated several recommendations and action plans. One of these essential recommentations is No. 96. It states that,

> the Secretary General, the organization of the United Nations system, especially the United Nations Education, Scientific and Cultural Organizations (UNESCO) and the other international agencies concerned should, after consultation and agreement, take the necessary steps to establish an international programme in environmental education, interdisciplinary in approach in school and out of school encompassing all levels of education and directed towards the general public in particular the ordinary citizen living in rural and urban areas, youth and adults alike, with a view to educating him as to the simple steps he might take within his means, to manage and control his environment.

This recommendation strongly suggests that there is a global need for developing and establishing international environmental education. It also implies that environmental education can contribute towards developing and improving the environments for better human habitation.

Close co-operation was then established between UNESCO and United Nations Environment Programme (UNEP). With the guidance from UNESCO-UNEP many environmental programmes emphasing training, materials development, research information exchange, e.t.c. have been implemented by many nations. In Kenya, for instance, the National Environmental Secretariat (NES), an agency within the Ministry of Natural Resources and Environment has researched and published a series of reports on several aspects of the environment. Other institutions of higher learning in Kenya, such as Kenyatta University, Moi University, Kenya Science Teachers College and others, are providing courses in environmental studies for future teachers.

b) Unesco-Unep-International Environmental Programme-Belgrade 1975

The year 1975 signifies the establishment of UNESCO-UNEP International Environmental Education Programme (IEEP). The objectives of the IEEP are the

implementation of the recommendations of the Tbilisi Intergovernmental Conference on Environmental Education, held in 1977 (see below) through encouraging and assisting governments, national, regional and international institutions to incorporate environmental education into formal and non-formal education systems and programmes, to make people aware of the relationship between man and the environment on which he depends, to impart knowledge and skills for solving environmental problems for the protection and improvement of the environment and its quality. An additional objective is to assist people and nations to provide potential solutions to the existing environmental problems, and to prevent people and nations from creating new environmental problems.

c) Intergovernmental Conference on Environmental Education-Tbilisi, 1977

This was the first Intergovernmental Conference on Environmental Education organized between UNESCO and UNEP. This was a follow-up to the Stockholm Conference on the human environment. In essence, the standing contribution of the Tbilisi Conference was the formulation and endorsement of environmental education goals, objective and guiding principles which have since served as a common denominator in the development of most environmental education activities at the international, and regional levels. The conference generated strategies for the development of environmental education and training. Recommendation NO. 21 of this conference stated that,

> ...the institutional and educational changes required for the incorporation of environmental education into national education system should be based not only on experience but also on research and evaluation aimed at improving educational policy decisions. Recommended to all Member States: that they carry out research concerning: (1) the goals and objectives of environmental education; (2) the epistemological and institutional structures that affect consideration of environment demands; and (3) the knowledge and attitudes of individuals, in order to identify more precisely that most effective educational conditions, types of action by teachers and processes of assimilation of knowledge by pupils, as wells as obstacles to the modification of concepts, values and attitudes which are held by individuals and are involved in environmental behaviour.[4]

Since the Stockholm Conference, many meetings, workshops, symposia, pilot projects and other action programmes have been conducted at the global, regional, national, local community and institutional levels. The findings of such activities have been collected, discussed and refined, and recommendations for their extended investigation or implementation have been documented in many meetings held for example, in Brazzaville In the case of Kenya, examples of initiatives are the National Symposium, the Association of African Universities Workshop and the Kenyatta University Workshop. At meetings such as these, problems related to Environmental Education were raised, particularly with regard to its concepts and audiences; environmental issues and problems; aims and objectives; programme development strategies; information network; global, regional, national environmental needs and priorities; teaching/learning materials development, research and staff training needs and so on. Recommendations were also formulated as they apply to the various audiences and educational levels.

Specific examples of the machinery which have been established to promote EE include UNEP and Habitat, both headquartered in Nairobi. Kenya is fortunate to have these vital UN bodies dealing with environmental issues at its doors. The Kenya government and its institutions, including schools, colleges, universities, and other agencies can positively exploit the resources at these U.N. bodies, especially UNEP for their own good in enhancing people's awareness and educating them about ways of improving the environment for the betterment of all. Specifically, Kenya has established viable branches such as the National Environment Secretariat to do research, publish and educate the public about the environment and, simulataneously, the Kenya's Presidential Commission on Soil Conservation and Afforestation is busy with providing practical solutions (gabions) for preventing soil erosion, water management, tree planting, and conserving forests and other environmental initiatives are continuously being deliberated, decisions formulated and implemented.

Based on the types of environmental problems now existing worldwide, it can be observed with absolute certainty that there is a need for EE. The need for EE was recognized by the international community in 1972 Stockholm and 1977 Tbilisi Conferences. EE belongs to every sector of the national economies. For instance,

> With growing awareness of environmental problems consideration is being given to the type of education programmes needed to meet our requirements ... Only relevant education for the public on horizontal scale remains the most powerful instrument currently available to bring about improvement and change.[5]

There is an increasing role of EE in nearly every setting of national economies, hence, an understanding, of its basic concepts, values, and principles are prerequisites to developing EE programmes and contributing to national development.

SECTION THREE

Basic Concepts, Values, and Principles

As it is in many subjects and fields of knowledge, concepts, must be clearly presented and explained. In this section the following broad concepts will be discussed: environment and environmental education.

a) Environment

What is environment? Environment can be conceived as comprising of nearly everything that is associated with all organisms and this also encompasses other organisms in the living and non-living world where life exists. Included in these associations are the weather, seasonal changes, the physical and chemical composition of the soil and all aspects of an organism's surroundings. The term "environment" can be synonymous to the concept "surroundings" of an organism in its habitat. Sometimes the concept environment is regarded as including all aspects of people and their surroundings, individually or collectively. This pattern of thought considers all the natural and socio-cultural elements which affect human beings directly or indirectly in the living as well as working conditions The environment can be conceptualized as encomposing four components - supra, living, social and personal - as shown below.

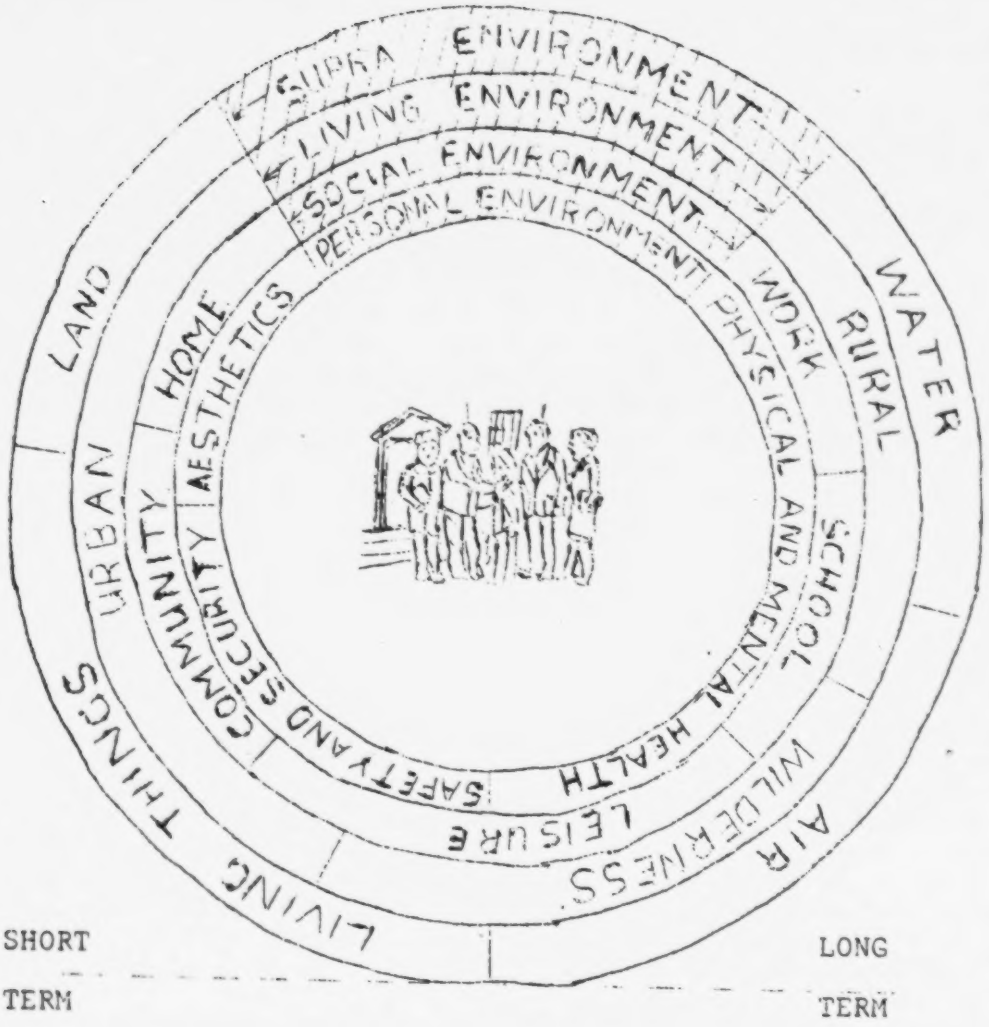

Figure 1: Man and His Environment

SOURCE: UNESCO-UNEP Consultation Meeting on the Incorporation of Environmental Education into Technical and Vocational Education Colombo Plan Staff College for Technician Education Singapore March 1986. p. 11.

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The Glossary of Environmental Education Terms - Unesco-UNEP, 1983 describes the environment as "The aggregate of surrounding things (biotic and abiotic) and conditions that influence the life of an individual organism of population, including humans. The Unesco concept of the environment includes a complex of natural, built and social components in the life of humanity." No organisms including man exist without environments-the biosphere where the ecological relationships seem to aggregate and mutual interdependency exist.

b) Environmental Education

"Education" is a continuous process, while environmental education is one specialization among many in education. What then is environmental education? And what makes education environmental? Environmental education means different things to different people in all walks of life. Some people define or describe environmental education as a branch of science education, nature study, the study of ecological relationships, conservation education, preservation education, a function of economics, or resource management education. According to the Glossary of Environmental Education Terms Unesco, 1983 is described as "The educational process that deals with the human interrelationships with the environment and utilizes an interdisciplinary problem-solving approach with value clarification."[6] Many definations of environmental education have been formulated by different groups dealing with environmental education. Of these definitions, the majority of environmental educationists and other groups endorse and use the following:

> Environmental education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biophysical surroundings.
> Environmental education also entails practice in decision-making and self-formulation of code of behaviour about issues concerning environmental quality.[7]

This definition was accepted and recommended for wide use by participants in the International Working Meeting on Environmental Education in the School Curriculum, organized by the IUCN Commission of Education under the sponsorship of Unesco, 1970. This definition has been endorsed by the National Association for Environmental Education in the United Kingdom.

Out of this definition a few additional important educational concepts can be extracted. These are values, attitudes and skills. These elements are essential in the facilitation of the implementation of environmental education programmes. Values may differ from one society to the other, but inspite of the differences, values produce behaviour in people (emotional, judgemental). Attitudes represent human behavioural dispositions or tendencies. Attitudes can be positive or negative. Environmental education is linked to value and attitude types of education.

In order to interact fully and effectively with the environment, skills are essential. The skills can take the form of exploring, probing, discovering, interpreting, communicating, evaluating and arriving at implementable formulated decisions. Skills also include observation, inquiry, problem-solving, value clarification and others. Armed with these values, attitudes and skills, environmental education concerns itself with educational processes, knowledge and understanding of and commitment to solving environmental problems. The need for environmental education is continuous because each new generation needs to learn and practice protection, management and conservation of natural resources for itself and future generations.

With this conceptual framework of EE and its rationale, there is no doubt that this important subject has significant contributions to make towards improving the environments and quality of life. EE aims at improving all ecological relationships and interactions between humanity and nature, and at the same time improve the environmental interactions between peoples. To accomplish this, the overall goal of environmental education should be to develop a world population that is well informed and concerned about the environment and its myriads ecological problems. This well informed population need to be equipped with skills, attitudes, knowledge, and to commit itself towards providing potential solutions to the prevailing environmental crises and to avoid the possibilities of creating new problems.

c) Principles of EE

Like in all fields of knowledge, EE has its own base and the principles on which it operates. In the definitions of EE, already provided, principles were certainly implied. For instance, skills, attitudes and values. Through environmental education, everyone can and must acquire knowledge and skills which equip the individual to participate actively in all decision-making processes required in the environmental problem-solving exercises in the society.

Some of the principles of EE include the following and must:

1. Consider the environment in its totality- natural and built, technological and social (economic,) political, cultural-historical, moral ethical;

2. Be a continuous lifelong process, beginning at the pre-school level and continuing through all formal and non-formal stages;

3. Be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective;

4. Examine major environmental issues from local, national, regional and international points of view, so that students receive insights into environmental conditions, in other geographical areas;

5. Help a learner discover the symptoms and real causes of environmental problems;

6. Focus on current and potential environmental situations, while taking into account the historical perspective;

7. Utilize diverse learning environments and a broad array of educational approaches to teaching/ learning about and from the environment with due stress on practical activities and first-hand experience.[8]

Goals, Objectives and Training in EE

In order to implement Environmental Education Programmes effectively, clearly articulated goals, objectives, and training using various methods (interdisciplinary, multidisciplinary) are essential. Environmental Education operate on three broad areas of goals.

a) Goals

The goals include:

1. Fostering clear awareness of, and concern about economic, social and ecological interdependence in urban and rural areas;

2. Providing every person with opportunities to acquire the knowledge, values, attitudes, commitment

and skills needed to protect and improve the environment;

3. Creating new patterns of behaviour of individuals, groups and society as a whole towards the environment.

To complement these goals there are five categories through which information and training can be imparted to members of the international community. These objectives are outlined below.

b) Objectives

1. Awareness: To help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems;

2. Knowledge: To help social groups and individuals gain a variety of experience in, and acquire a basic understanding of the environment and its associated problems;

3. Attitudes: To help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection;

4. Skills: To help social groups and individuals acquire the skills for identifying and solving environmental problems;

5. Participation: To provide social groups and individuals with an opportunity to be actively involved at levels in working towards resolution of environmental problems.

In any training process in EE a combination of these objectives can facilitate the acquiring of skills, knowledge, and participation in environmental problem-solving activities.

c) Objectives of EE and training in Africa

Out of many deliberations on environmental issues in the African region, a meeting of experts in the scientific community convened in Nairobi, Kenya in April of 1983 to deal with key issues in EE and training. These issues included increasing the awareness of people, especially the leadership, concerning human activities (deforestation, soil erosion) related to the environment. These issues also required skills necessary for building an environment in which people may live, develop, and flourish. From this conference a number of objectives necessary for actions were generated and they include:

1. To provide a framework for catalyzing, coordinating and organizing environmental education and training activities in Africa at the national, regional and sub-regional levels for all systems of education;

2. To provide an agreed upon framework for the programming of environmental education and training activities in Africa, which countries can use to assess and promote the incorporation of environmental dimensions in their education and training systems;

3. To promote general awareness of the need for environmental education and training in the region based on information exchange about activities, programmes and materials which have been developed;

4. To provide a framework to facilitate compilation and production of materials for developing environmental education and training in the region;

5. To create educational conditions which will make people in the African region aware of concerned about, committed to, and equipped with skills necessary for solving environmental problems and preventing new ones.[10]

In order to accomplish these objectives, UNEP's Environmental Education and Training Unit seeks a strong collaboration of four vital elements: a) institutional (governments) b) curriculum development incorporating environmental education in the existing curricula; c) training programmes ecompassing the preparation of teaching guides, bibliographies and diversified

instructional materials to aid educators in the implementation of the programme; and d) research in institutional and methodological changes needed to incorporate environmental education and training into educational and training systems. These four elements will complement each other in their approaches and in their efforts to disseminate information and impart knowledge on environmental education and national development activities.

SECTION FOUR

The Role of EE in National Development

As presented in the previous sections of this paper, it can be observed that environmental education movements worldwide have made some contributions towards national development activities in many nations. For example, in 1979 the Senegals's National Council for Urbanism and the Environment "initiated special measures for the conservation and improvement of the environment".[11]

To complement these measures, the Senegalese government implemented EE throughout the nation through integrating EE in the school programmes. Following the Stockholm and Tbilisi conferences EE programmes with in built activities for development have been developed and implemented globally. The annual national tree planting activities carried out by many countries (Kenya) are some of the practical efforts necessary for development.

There are many international agencies participating in development and are concerned about the environment and sustainable development. In this section two examples of these agencies will be presented very briefly in terms of their role in development: United Nations Environment Programme (UNEP) and The World Bank.

UNEP

After the Stockholm Conference, UNEP was "born" and was headquartered in Kenya where it is carrying out its environmental policies, and advocating sustainable developments in developing economies and the protection of the world renewable (forests, fish) and non-renewable (soil, coal) resources through educating the people. One of the main functions assigned to the Governing Council of UNEP by the General Assembly in Resolution 2997 (XXVII) of 15 December, 1972 is:

> To keep under review the world environmental situation in order to ensure that emerging environmental problems of wide international significance received appropriate and adequate consideration by Governments.[12]

Chapter II of UNEP's 1987 "State of the World Report" population growth, human settlements, transport and tourism, agriculture and food production; industrial development; and energy are well discussed and analyzed. One of the striking facts noted in this Report emphatically states that, "As for the global distribution, 80 per cent of the increase in the world population during the last 30 years occurred in the developing countries".[13] This rapid human population has many implications on world resources (food, forests,). EE can contribute in the management and conservation of these resources.

The World Bank

This agency is a major lending institution to member countries and world-wide. The World Bank lends money to these member countries for many development projects. With the growing concern of the environment, the Bank established the Office of Environmental Affairs in 1970 to assess and promulgate environmental standards as they affect economic development procesesses. For instance, the Bank has established environmental guidelines e.g. Social aspects: Human relations in settlement patterns (cement plants) Optimization: Cost analysis of alternatives.[14]

In an address to the United Nations Economic and Social Council (ECOSOC) in 1970, a former World Bank President, R.S. McNamara pointed out that,

> ...one problem facing finance institutions was how they might help developing countries avoid or mitigate some of the environmental damage that economic projects can cause - without slowing the pace of economic progress. ... the costs resulting from adverse environmental change could be enormous, and that a small investment in prevention would be worth many times what would later have to spent to repair any damage.[15]

(Emphasis added).

It is apparent that environmental conservation and protection and "Development Without Destruction" are being realized in many countries. This realization has resulted into concrete actions such as constructions of gabions to curb exessive soil erosions in many localities.

SECTION V

EE and Development in Kenya

Environmental Education is vital to the survival of mankind. Without educating the masses, they will continue to mismanage and destroy the environment on which their existence depends. In this respect they can contribute towards negative development activities (deforestation, overgrazing).

Kenya has demonstrated a major comitment to education and training of all its citizens in the preservation and conservation of all resources for the present and future generations. Because of this commitment, the Kenya Government has included environmental matters and EE in its major policy documents. In the 1979 - 83 Development Plan "Rural Afforestation Scheme" and "Local Afforestation Programme" are very well articulated. For example, paragraph 6.206 states that,

> The main objectives of this programme include the prevention of soil erosion, protection of water catchment areas as well as the provision of fuel wood and building poles for the rural population.[16]

Several of these programmes have been implemented through the local afforestation programmes in the Republic, and through education and training programmes undertaken by many foresters and forest assistants at the Londiani Forest Training School in Kericho District and other training institutions.

Afforestation programmes are very necessary for Kenya's national development. Without active and practical afforestation efforts, the Republic's forests may be reduced to denuded areas by human indiscriminate deforestation activities. It was

recently reported that, "Kenya's forests are disappearing at an alarming rate of 2.5 per cent annually".[17] This report further indicated that in 1980 and 1983 twenty (20) million and thirty (30) million trees were planted respectively. During the 1984 - 85 year (50) fifty million were planted and in 1988 between eighty to eighty five (80 - 85) million seedlings are anticipated to be planted. The goal is to plant at least two hundred and ninety (290) million seedlings annually.[18]

Perhaps it is appropriate to mention at this point that the Presidential Commission on Soil Conservation and Afforestation is a national body that coordinates all the activities related to soil/water conservation and afforestation programmes. Another body, the Kenya National Environment Secretariat (NES) was established in 1974 following the Stockholm Conference to coordinate all matters that relate to the environment in the Republic. The Kenya government recently released the Kenya African National Union (KANU) manifesto which places the environmental conservation, environmental education and training and development in the third position in priority.[19] The Kenyan government takes environmental matters very seriously. In addition to all these efforts, the Non-Governmental Organizations (e.g. Mazingira Institute) play significant roles in environmental education and national development.

Agents for EE and Development in Kenya

These agents include the following:

1. The NGO's (CARE Kenya - Pied Crow Magazine),
2. United Nations agencies (UNEP),
3. The Government ministries,
4. Schools, Colleges and Universities,
5. Mass media (TV, Radio, Newspaper, local barazas, songs) and other methods.

SECTION SIX

Summary/Accomplishments

This paper has presented, discussed and analyzed the evolution of EE and its contributions to national development activities. Through EE and development efforts, the Kenya government has accomplished many things. These include: incorporation of environmental education in the primary and secondary school formal curriculums;

environmental education progrommes have been developed and implemented at the tertiary level; millions of tree seedlings are planted annually through rural afforestation programmes throughout the country; gabions and terraces are being constructed in many parts of the country to curb soil erosion problems, and the contributions of government ministries and NGO's towards positive national development.

It can be observed that EE and other national strategies are potential and viable tools for "development methods require well articulated, planned and viable decisions with systematic evaluations.

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19. KANU, Sunday Nation "Kanu Releases Manifesto on Strategies for Development" Feb. 28, 1988 pp. 6 to 7.

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